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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,695	12/17/2001	Hiroshi Kume	31762-177289	6299

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Volentine francos PLLC
12200 Sunrise Valley Drive
Suite 150
Reston, VA 20191

EXAMINER

KNOLL, CLIFFORD H

ART UNIT

PAPER NUMBER

2112

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/015,695

Applicant(s)

KUME ET AL.

Examiner

Clifford H Knoll

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, "controls an output of an interrupt signal" is unclear because its suggested relationship with the previously recited "interrupt circuit which outputs an interrupt signal" has not been clearly established. The "sets a rest of the data amount ... as a predetermined threshold" is unclear because it is not clear how the setting of something predetermined is intended. Subsequently, the comparison of "the data amount" with "the predetermined threshold" is unclear inasmuch as it has just apparently been set as the same. The "at a time of the interrupt" is unclear because, while suggestive of a relationship between the interrupt recitation and transmission recitation, that relationship is not clearly established in the body of the claim.

In claim 2, the "data is being transmitted" is unclear because its relationship with previously recited transmitted data is suggested but not clearly established; in particular, it cannot be determined whether the transmission refers to transmission from or to the

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buffer circuit. The "interrupt signal" lacks a clear antecedent basis (two prior recitations of "an interrupt signal").

In claim 13, "the status" and hence "the interrupt corresponding to the status" lacks clear antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8 and 9-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Moore (US 6378011).

Regarding claim 1, Moore discloses a transmission buffer circuit which temporarily stores the data for continuously transferring the data during data transmission (e.g., col. 3, lines 39-41); an interrupt circuit which outputs an interrupt signal to inform the host of interrupt based on a transmission/reception condition of the data to or from said terminal and on a status of transmission error of the data (e.g., col. 10, lines 39-44); a buffer monitoring circuit which monitors a data amount in said

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transmission buffer circuit, sets a rest of the data amount in said transmission buffer circuit as a predetermined threshold, checks if the data amount has reached the predetermined threshold and, based on a checking result, controls an output of an interrupt signal to be output by said interrupt circuit (e.g., col. 4, line 37); and a buffer control circuit which provides said buffer monitoring circuit with information used for monitoring of the data amount and controls an operation of said transmission buffer circuit, said buffer control circuit controlling transmission of a data amount, represented by a difference between a total data amount that may be stored in said transmission buffer circuit and the predetermined threshold, as a data amount to be transferred to said transmission buffer circuit (e.g., col. 7, lines 44-50).

Regarding claim 2, Moore also discloses even when data has been transmitted from said transmission buffer circuit, said buffer control circuit assigns priority to an operation of said buffer monitoring circuit that indicates that data is being transmitted and inhibits the interrupt signal from being sent to said interrupt circuit (e.g., col. 7, lines 48-50).

Regarding claims 3 and 4, Moore also discloses wherein said buffer control circuit includes said buffer monitoring circuit (e.g., col. 7, lines 44-47).

Regarding claims 5-8, Moore also discloses wherein said communication terminal is included in a radio device that performs radio transmission (e.g., col. 3, lines 33-35).

Regarding claim 13, Moore discloses setting a predetermined amount of data to be left in said transmission buffer circuit as a threshold used to determine a timing

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position at which the interrupt will occur (e.g., col. 4, line 37), a second step of transferring data from said host to said transmission buffer circuit, considering a total data storage amount of said transmission buffer circuit and the threshold (e.g., col. 7, lines 37-42); third step of reading out data, stored in said transmission buffer circuit, for conversion to serial data (e.g., col. 8, lines 30-36), a fourth step of checking if a data amount left in said transmission buffer circuit has reached the threshold; incrementing a count value that corresponds to an amount of data output from said transmission buffer circuit if an amount of the transferred data that is left in said transmission buffer circuit is larger than the threshold (e.g., col. 6, lines 25-30); generating a control signal upon detecting that, if the amount of data left in said transmission buffer circuit has reached the threshold, the amount of data is in a timing position at which the interrupt corresponding to the status is to be generated (e.g., col. 4, lines 35-37); generating an interrupt signal in response to generation of the control signal (e.g., col. 4, lines 35-37); an eighth step of checking if further data transfer is to be executed in response to the interrupt signal supplied to the host; and a ninth step either for returning to said second step if the data transfer is to be continued or for terminating communication to terminate the data transfer (e.g., col. 7, lines 39-42; col. 8, lines 56-57).

Regarding claim 14, Moore also discloses in said sixth step, even when data has been transmitted from said transmission buffer circuit, an operation of said buffer monitoring circuit that indicates that data is being transmitted is assigned priority and the generation of the interrupt signal is inhibited (e.g., col. 7, lines 48-50).

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Regarding claims 15 and 16, Moore also discloses wherein in said third to seventh steps, the host checks if interrupt is to be executed while performing other task processing (e.g., col. 7, lines 25-26, 47-48).

Regarding claim 17, Moore discloses an internal data bus; a transmit data memory which stores data transmitted on said internal data bus and outputs the data; a transmission controller which controls a flow of the data on said internal data bus to said transmit data memory based on a processing rate of said transmit data memory; a transmit shift resistor which stores an output from an external unit and outputs data (e.g., col. 4, lines 7-8); a receive shift resistor which stores data input from the external unit and outputs the data; a receive data memory which stores the data output from said receive shift resistor and outputs the data to said internal data bus and a reception controller which controls a flow of the data from said receive data memory to said internal data bus based on a processing rate of said receive data memory (e.g., col. 8, lines 8-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore as applied in respective claims above, in view of well-known use of a particular radio communications standard, as evidenced by Bridgelall (US 6717516).

Regarding claims 9-12, Moore discloses the communications terminal as applicable to radio devices, but neglects to mention the particular instance of a Bluetooth communication standard. However, the Examiner takes Official Notice that Bluetooth is a well-known standard for radio communication and is well-known to advantageously provide flexible communications for a variety of wireless devices, and it would be obvious to use this standard in the instance of the communication terminal of Moore. This is evidenced by Bridgelall, who teaches the general acceptance and advantageous use of the Bluetooth standard for a variety of wireless devices (e.g., col. 3, lines 52-56) and in particular in communications equipment using transmit FIFOs (e.g., col. 7, lines 30-31). Therefore, it would have been obvious to combine a well-known radio communications standard with Moore's communications terminal for radio devices to obtain the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clifford H Knoll whose telephone number is 703-305-8656. The examiner can normally be reached on M-F 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

chk



MARK H. RINEHART
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100